Remarks

Claims 1-4, 7-13, 39, 44, and 143-148 were previously pending in this application. By this amendment, Applicant is amending claims 1-4 and 39 without prejudice or disclaimer. The claims have been amended to add the limitation that the mammalian cell is a tumor cell. Claims 145-146 have been canceled. As a result claims 1-4, 7-13, 39, 44, 143-144, and 147-148 are pending for examination with claims 1, 13, 39, and 44 being independent claims. No new matter has been added.

Restriction and Election of Species

Applicants gratefully acknowledge the withdrawal of the species restriction requirement by the Examiner.

Claim Rejections Under 35 U.S.C. § 112, first paragraph

Claims 1-4, 7-13, 39, 44, and 143-148 were rejected under 35 U.S.C. § 112, first paragraph for a lack of enablement.

According to the Examiner, the specification is enabled for "a method for decreasing mitochondrial membrane potential in a mammalian cell and for inducing the expression of the immune molecule of MHC Class II HLA-DR, comprising administering an MHC class II ligand."

It is further stated that the specification does not enable the additional step "of contacting said cell with an amount of an MHC Class II HLA-DR inducing agent effective to induce expression of any immune molecule including MHC Class II HLA-DR on the surface of the mammalian cell, wherein said agent is any fatty acid." The reason provided for the rejection is that the specification "does not exemplify that oleic acid or any other fatty acid, induces HLA-DR expression. A search of the art at the time the invention was made does not appear to teach that fatty acid induces HLA-DR expression."

Applicant agrees that the prior art of which we are aware does not describe the finding that fatty acids cause the induction of immune specific molecules on the cell surface. This finding is part of the invention.

The specification does provide adequate enablement for the use of fatty acids as inducers of immune molecule expression on a cell surface. Initially, the specification teaches that mitochondrial metabolic regulation is directly related to the expression of immune recognition molecules on the cell surface (Page 33, lines2-4) and that, in particular, when electron transport is uncoupled to oxidative phosphorylation the cell surface expression of immune recognition molecules is increased (Page 33, lines 6-8). When tumor cells are contacted with fatty acids increased expression of immune recognition molecules is found on the cell surface. (page 7, lines 24-27, page 24, lines 15-32, page 33, lines 14-23) It further is taught that these immune molecules may be HLA-DR. (Page 33, lines 5-6) Although specific working examples are not required, Applicant has included working examples in the specification that support the finding that fatty acids induce immune molecule expression in tumor cells. These include the following: 1) drug resistant tumor cells (L1212DDP) use oleic acid at much higher rates than L1210 (Example 10) (thus mitochondrial membrane potential is lower), and 2) drug resistant tumor cells (L1210DDP) have higher UCP and lower mitochondrial membrane potential than wild type tumor cells (L1210) (Example 7).

In order to advance prosecution, Applicants attach additional data demonstrating that fatty acids cause induction of immune molecule expression, as described in the specification. The data described in the attached declaration of Martha Karen Newell, demonstrate that the treatment of cells with fatty acids caused an induction of immune molecules (HLA-DR) on the cell surface.

Thus, the specification provides an enabling disclosure of the use of fatty acids to induce cell surface immune molecule expression.

Rejections Under 35 U.S.C. §102

Claims 1-2, 39, 143, and 145-147 have been rejected under 35 U.S.C. §102(b) as being anticipated by Burrows et al.

The claims as amended are not anticipated by Burrows. Applicant has amended claims 1 and 39 to recite the limitation that the mammalian cell is a tumor cell. Burrows describes the use of an antibody as a marker of vascular epithelial cells. Burrows administered the antibody to mice and demonstrated that it specifically stained vascular epithelial cells. The antibody of Burrows stained the epithelial cells and a different antibody, an anti-class I antibody, stained the tumor. Thus, Burrows did not contact a tumor cell with an MHC class II HLA-DR antibody in an amount effective to decrease mitochondrial membrane potential. In view of this, independent claims 1 and 39 and the claims dependent thereon are not anticipated by Burrows.

Accordingly, withdrawal of this rejection is respectfully requested.

Claims 3-4, 7-13, 44, 143-144, and 148

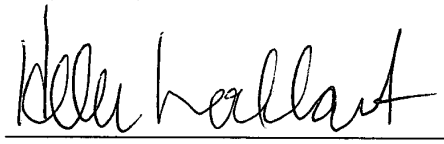
Applicants acknowledge that claims 3-4, 7-13, 44, 143-144, and 148 have not been rejected in view of the prior art. The claims have only been rejected as lacking enablement. In view of the arguments relating to enablement presented above, it is believe that claims 3-4, 7-13, 44, 143-144, and 148 should now be allowable.

CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

A check for a two-Month Extension of Time is enclosed. If there is any further fee due with this response that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,



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